

# DOE

# NEWS

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## **Energy Department Making Homes and Offices More Energy Efficient**

*New Research and Development Projects Will Also Improve Nation's Power  
Supply and Maintain a Cleaner Environment*

U.S. Secretary of Energy Bill Richardson today announced funding for the first phase of 18 research and development projects to improve the energy efficiency of commercial and residential buildings across the country by using less electricity and reducing pollution from heating and cooling systems.

“By making these buildings more energy efficient, we are saving money, preventing power supply shortages and keeping the environment cleaner,” said Secretary Richardson. “Residential and commercial buildings account for approximately 65 percent of the electricity and 40 percent of the natural gas used in the United States.”

The research and development agreements, which are worth \$8.4 million over a one-year period (Phase I), will fund projects that target research and development activities in three broad areas:

- < **Building Equipment:** Energy-conversion and control equipment for lighting, space heating, cooling, ventilation, cogeneration (on-site power generation).
- < **Building Envelope:** Construction materials and components for windows, walls, roofs and foundations.
- < **Whole Building Technologies:** Integrate components and systems governing overall energy use of a building.

The projects will last from one to three years and have a potential total federal cost of about \$18 million. The research will help develop technologies such as electricity-producing fuel cells, electrically tinted windows, light-emitting diode solid-state lamps, innovative heating and cooling concepts, and remote monitoring of building energy management systems.

Project recipients will provide 20 percent to more than 50 percent additional funding through cost-sharing agreements. The projects were selected using four criteria; technical merit; energy, environmental and economic benefits; capability of the proposer and industrial involvement and commercialization potential.

The awards are expected to be made by September 30. The department's National Energy Technology Laboratory will manage the projects. More information on the Energy Department's energy efficient buildings programs can be found at: [www.eren.doe.gov/buildings/](http://www.eren.doe.gov/buildings/)

A list of projects with descriptions is attached.

<b>Category, Participant Name and estimated Phase I cost-share</b>	<b>Estimated Phase I DOE funding</b>	<b>Project Title</b>
<i>Lighting</i>		
<b>Nitres Inc.</b> Goleta, CA \$200,000	\$798,080	<b>Energy Efficient Solid State Lamp</b> Nitres proposes to develop a bright, high efficiency, light emitting diode (LED) and packaging technology leading to solid state lamps capable of replacing less energy efficient incandescent and halogen reflector lamps.
<b>Rensselaer Polytechnic Institute (RPI)</b> Troy, NY \$123,107	\$249,945	<b>Reducing Barriers to Use of High Efficiency Lighting Systems</b> The Lighting Research Center of RPI, in conjunction with Pacific Gas and Electric, proposes to demonstrate integrated lighting equipment and control systems that significantly reduce lighting energy consumption in commercial buildings.
<b>Electric Power Research Institute (EPRI)</b> Palo Alto, CA \$198,100	\$307,798	<b>Advanced Light Source Development: Multi-Photon Phosphor Research</b> EPRI proposes to double the current efficacy of commercially applicable light sources to 200 lumens per watt in low pressure fluorescent lamps.
<b>Fusion Lighting Inc.</b> Rockville, MD \$1,796,376	\$1,091,871	<b>Next Generation High Efficiency Lighting Technology</b> Fusion Lighting proposes to engineer and test a new design for a sulfur lamp utilizing a higher efficiency microwave tube, power supply and other improvements.
<b>GE Corporate Research and Development Inc.</b> Niskayuna, NY \$240,002	\$960,007	<b>Organic Light Emitting Diodes for General Lighting</b> GE Corporate Research and Development proposes to reduce the long term technical risks inhibiting the lighting industry from developing LED technology using organic polymers.
<i>Space Conditioning Equipment</i>		
<b>Rocky Research</b> Boulder City, NV \$55,200	\$220,179	<b>Advanced Thermal Expansion Devices for Reduced Cycling Losses and Improvement Efficiency in Heating and Cooling Equipment</b> Rocky Research proposes to develop and commercialize a patented pulsed operation valve for the control of refrigerant flow.

<b>Davis Energy Group Inc.</b> Davis, CA \$109,147	\$419,397	<b>Hypak--A Hydronic Rooftop Packaged Unit</b> Davis Energy Group proposes to develop a cost-effective rooftop heating, ventilating and air conditioning unit that reduces electrical energy consumption and peak demand compared to current rooftop units by more than 65 percent in dry climates and 50 percent in humid climates.
<b>NRG Technologies Inc.</b> Reno, NV \$90,003	\$360,013	<b>Development of Low Cost Total Energy Exchange Devices for Reducing Building Energy Consumption</b> NRG Technologies Inc., proposes to reduce energy use in buildings while assuring acceptable indoor air quality by developing a low-cost, high efficiency enthalpy wheel to recover waste heat at one-fifth the cost of conventional techniques.
<b>GE Corporate Research and Development Inc.</b> Niskayuna, NY \$965,361	\$959,695	<b>Variable Speed Integrated Intelligent Blower for High Efficiency Heating, Ventilating and Air Conditioning</b> GE Corporate Research and Development proposes to develop and demonstrate a variable speed integrated intelligent blower that combines the fan, shroud and motor/drive assembly into a common structure.
<b>Insight Technologies Inc.</b> Bohemia, NY \$52,635	\$210,541	<b>Field Test of the Flame Quality Monitor</b> Insight Technologies proposes to develop and test a flame quality monitor, which optically monitors the quality of a home heating system flame and signals the service organization when service is required, resulting in improved reliability and increased safety.
<b>North Carolina Advanced Energy Corporation</b> Raleigh, NC \$92,183	\$228,733	<b>Field Study Comparison of the Energy and Moisture Performance Characteristics of Ventilated vs. Sealed Crawlspace in the South</b> The North Carolina Advanced Energy Corporation proposes a field test program to demonstrate that sealed crawlspaces offer measurable benefits over traditional, ventilated crawlspaces in the Southern U.S.
Building Envelope		
<b>Schott Donnelly, LLC</b> Tucson, AZ \$394,769	\$394,769	<b>Development of Durable Large Area Electrochromic (EC) Glazing</b> Schott Donnelly, LLC, proposes to improve the clarity and durability of occupant-controlled electrically-tinted windows and to demonstrate the windows for architectural applications.
<b>Aerodyne Research Inc.</b> Billerica, MA \$116,079	\$348,228	<b>Non-Intrusive Sensor for Gas Fill Verification of Insulated Glass Windows</b> Aerodyne Research proposes to develop a sensor which can verify the proper gas filling of insulated glass windows in a non-intrusive and non-destructive manner, and which will determine if window seal damage has occurred after installation.
<b>Aspen Systems Inc.</b> Marlborough, MA \$49,996	\$199,984	<b>Affordable Window Insulation with R-10/inch Rating</b> Aspen Systems proposes to develop a process and the equipment to produce continuous sheets of a transparent, insulating gel which will be used to produce clear glass double-glazing windows.

<b>Colorado State University</b> Fort Collins, CO \$17,232	\$67,822	<b>Phase Change Materials in Floor Tiles for Thermal Energy Storage</b> Colorado State University proposes to develop and test a floor tile that can store significant amounts of thermal energy.
<i>Appliances</i>		
<b>Arthur D. Little Inc.</b> Cambridge, MA \$78,258	\$312,027	<b>Application of Best Industry Practices to the Design of Commercial Refrigerators</b> Arthur D. Little proposes to apply best industry practices, used in the residential building sector, to the design of commercial reach-in refrigerators.
<i>Cogeneration</i>		
<b>Arthur D. Little Inc.</b> Cambridge, MA \$177,710	\$709,545	<b>Staging of Proton Exchange Membrane (PEM) Fuel Cell Stacks - Phase II</b> Arthur D. Little proposes to continue its development of stationary-staged PEM fuel cell technology with the objective of increasing the fuel utilization rate and energy efficiency while reducing the cost.
<i>Building Energy Management</i>		
<b>EFI Inc.</b> Boston, MA \$151,938	\$526,676	<b>Development of Internet-Based Facilities Automation System</b> EFI proposes to develop and test an Internet-based energy management system for small to mid-sized commercial facilities and multi-family residential buildings which will allow remote monitoring of multiple sites from a central location.

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